

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2003-141022

(43)Date of publication of application : 16.05.2003

(51)Int.Cl.

G06F 13/00
G06F 15/00

(21)Application number : 2001-336636

(71)Applicant : HITACHI SOFTWARE ENG CO LTD

(22)Date of filing : 01.11.2001

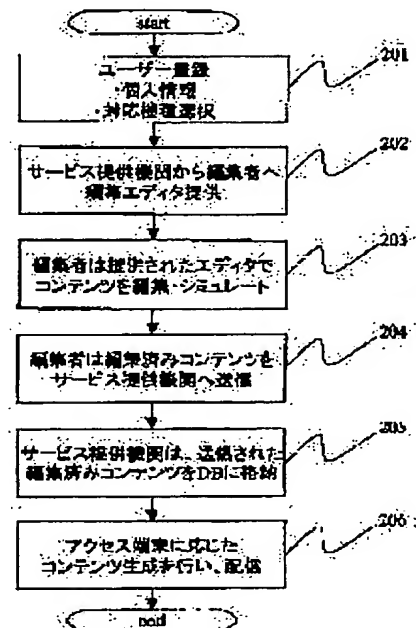
(72)Inventor : TAGUCHI MASAHIRO
KOBAYASHI HIROYUKI
FUJIOKA HIDEKI

(54) WEB CONTENT DELIVERY METHOD AND SYSTEM AND WEB CONTENT EDITING PROGRAM

(57)Abstract:

PROBLEM TO BE SOLVED: To divide a Web content for a second terminal such as PC without missing a creator's intention so as to be displayable on many types of first terminals while reducing the load of the creator.

SOLUTION: This method comprises a first step for dividing the Web content to be delivered in screen element unit in a content forming computer and delivering it to a content delivery service computer; and a second step for storing the screen elements received from the content forming computer in the content delivery service computer, then receiving a delivery request for the stored Web content from a first terminal, dynamically connecting the screen elements within the range never exceeding the limit capacity of the file size for 1 page of the first terminal of the delivery requester, and delivering the content to the first terminal of the delivery requester.



JP 2003-141022 A

(11)Publication number : 2003-141022 (51)Int.Cl. G06F 13/00
(43)Date of publication of application : 16.05.2003
(21)Application number : 2001-336636 (71)Applicant :HITACHI SOFTWARE ENG CO
(22)Date of filing : 01.11.2001 LTD
(72)Inventor : TAGUCHI MASAHIITO
KOBAYASHI HIROYUKI
FUJIOKA HIDEKI

(54) WEB CONTENT DELIVERY METHOD AND SYSTEM AND WEB CONTENT EDITING PROGRAM

(57)Abstract:

PROBLEM TO BE SOLVED: To divide a Web content for a second terminal such as PC without missing a creator's intention so as to be displayable on many types of first terminals while reducing the load of the creator.

SOLUTION: This method comprises a first step for dividing the Web content to be delivered in screen element unit in a content forming computer and delivering it to a content delivery service computer; and a second step for storing the screen elements received from the content forming computer in the content delivery service computer, then receiving a delivery request for the stored Web content from a first terminal, dynamically connecting the screen elements within the range never exceeding the limit capacity of the file size for 1 page of the first terminal of the delivery requester, and delivering the content to the first terminal of the delivery requester.

Disclaimer

This is a machine translation performed by INPIT (<http://www.ipdl.inpit.go.jp>) and received and compiled with PatBot (<http://www.patbot.de>). PatBot can't make any guarantees that this translation is received and displayed completely!

Notices from INPIT

Copyright (C) JPO, INPIT

The JPO and INPIT are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] A Web contents distribution method with which a file size of 1 page edits the 2nd different Web contents for terminals from the 1st terminal, and distributes the Web contents to the 1st terminal of distribution request origin, comprising:

The 1st step that divides Web contents of a distribution object into screen element units in a contents creation computer, and transmits to a contents distribution service computer.

After saving a screen element received from said contents creation computer in a contents distribution service computer at a contents database, The 2nd step that receives a distribution request from the 1st terminal over saved Web contents, combines said screen element dynamically in the range which does not exceed restriction capacity with a file size [in the 1st terminal of the distribution request origin concerned] of 1 page, and is distributed to the 1st terminal of distribution request origin.

[Claim 2] The Web contents distribution method comprising according to claim 1:

Before receiving a distribution request of Web contents, it is the machine kind information of the 1st terminal of distribution request origin of the Web contents concerned.

It has the 3rd step that registers restriction capacity with a file size [corresponding to machine kind information] of 1 page into a terminal database, A step which said 2nd step acquires machine kind information included during a distribution request from the 1st terminal, searches restriction capacity with a file size [corresponding to the machine kind information] of 1 page from said terminal database, and combines said screen element dynamically based on data volume of search results.

[Claim 3] The Web contents distribution method according to claim 2, wherein said 2nd step is further provided with a step which charges a contents distribution service fee with reference to machine kind information of the 1st terminal at a contents creator.

[Claim 4] The Web contents distribution method according to claim 2 having further a step which changes the number of screen elements combined dynamically according to a communicating state.

[Claim 5] The 2nd Web contents for terminals in which a file size of 1 page differs from the 1st terminal in a contents creation computer are edited, It is a Web contents distribution system which distributes the Web contents to the 1st terminal of distribution request origin from a contents distribution service computer, Said contents creation computer divides Web contents of a distribution object into screen element units, It has 1st means to transmit to a contents distribution service computer, After said contents distribution service computer saves a screen element received from said contents creation computer at a contents database, A distribution request from the 1st terminal over saved Web contents is received, A Web contents distribution system provided with 2nd means to combine said screen element dynamically in the range which does not exceed file size restriction capacity of 1 page in the 1st terminal of the distribution request origin concerned, and to distribute to the 1st terminal of distribution request origin.

[Claim 6] The Web contents distribution system comprising according to claim 5:

Before said contents distribution service computer receives a distribution request of Web contents, it is the machine kind information of the 1st terminal of distribution request origin of the Web contents concerned.

It has 3rd means to register restriction capacity with a file size [corresponding to machine kind information] of 1 page into a terminal database, A means for said 2nd means to acquire machine kind information included during a distribution request from the 1st terminal, to search restriction capacity with a file size [corresponding to the machine kind information] of 1 page from said terminal database, and to combine a screen element dynamically based on data volume of search results.

[Claim 7]The Web contents distribution system according to claim 6, wherein said 2nd means is further provided with a means to charge a contents distribution service fee with reference to machine kind information of the 1st terminal at a contents creator.

[Claim 8]The Web contents distribution method according to claim 6 having further a means to change the number of screen elements combined dynamically, according to a communicating state.

[Claim 9]A Web contents edit program used for a Web contents distribution system with which a file size of 1 page edits the 2nd different Web contents for terminals from the 1st terminal, and distributes the Web contents to the 1st terminal of distribution request origin, comprising:

The 1st step that displays contents of a distribution object on a display screen.

The 2nd step that sets up a boundary between displayed screen elements arbitrarily.

The 3rd step that generates a hyperlink between screen elements to which a boundary was set.

The 4th step that distributes a screen element which generated said hyperlink to a contents distribution service computer.

[Claim 10]The Web contents edit program according to claim 9 having further change and a step deleted and added by element units of HTML structure of contents for a boundary line between screen elements in said 2nd step.

[Claim 11]In said 3rd step, correlation operation of a screen element equivalent to a link destination is received on a text in selected contents, The Web contents edit program according to any one of claims 9 to 10 having further a step which generates a hyperlink which makes a selected text a hypertext and makes a link destination a screen element by which correlation operation was carried out.

[Claim 12]The Web contents edit program according to any one of claims 9 to 11 having further a step which changes and displays a display mode of a hyperlink in said 3rd step according to the completion of edit of a screen element of the hyperlink point in contents, and un-completing.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention the Web contents created, for example for personal computer users, The Web contents distribution method and system which restriction of the file size which can be displayed as 1 page distributes for [, such as a large portable telephone,] terminals are started, It is related with the method, system, and edit program which edit and distribute Web contents so that it can distribute without spoiling the meaning which a Web contents creator's intention and the tag of Web contents have especially.

[0002]

[Description of the Prior Art]For example, the Web contents created for personal computer (PC) users (2nd for terminals), In order to peruse using personal

digital assistants (the 1st terminal), such as a portable telephone and PDA (Personal Digital Assistants), the following two converting operation is needed. One is conversion of a Web content description language. When the personal digital assistant of an accessing agency does not support the description language of the Web contents of an access point, the work which changes a Web content description language is needed. Now, the automatic or manual Web content description language translation system is arranged on the Web server or the Web contents edit machine, and the service and the system which change a Web content description language using them exist.

[0003] Another is division of Web contents. With PC and a personal digital assistant, memory sizes differ greatly, capacity restriction with a file size of 1 page of a personal digital assistant is severe, and the contents beyond this restriction are not displayed. That is, with a personal digital assistant, it may be unable to express as the Web contents which can be displayed with PC. Therefore, in order to display the Web contents for PCs on a personal digital assistant, it is necessary to divide and distribute to compensate for restriction with a file size of 1 page of a terminal.

[0004] The automatic split method divided as a method of dividing Web contents so that it may be conventionally settled within 1-page file size restrictions of a personal digital assistant, and the manual split method which a contents creator takes into consideration the model of specific personal digital assistant, and divides or creates Web contents are used.

[0005]

[Problem(s) to be Solved by the Invention] However, when Web contents are divided with an automatic split method, in order to divide mechanically only depending on data size, without taking the meaning of contents into consideration, contents with a meaning are divided into other pages by the middle, and the problem that it cannot display as a maker's intention occurs.

[0006] Namely, as it is shown in drawing 14 (b) if division is not performed appropriately when it is what the Web contents which the contents creator meant illustrate to drawing 14 (a), As the portion which showed five items of the feature of picture management software is displayed only to [1] - [3], but it will be displayed as if the feature item was three items, or shown in drawing 14 (c), Description of "not corresponding" among "not supporting Windows2000 (registered trademark of Microsoft Corp.)" is divided into other pages, and there is a problem of being the display which gives misunderstanding as if it supported "Windows2000."

[0007] On the other hand, when a contents creator divides Web contents in consideration of a specific model with a manual split method, the aforementioned problem is not produced, but a variety of personal digital assistants take a labor great for dividing Web contents according to each.

[0008] The purpose of this invention the Web contents for the 2nd terminal of PC etc., It divides, without spoiling a maker's intention, and a maker's burden is eased, and it is in providing the Web contents distribution method, system, and contents edit program which can be displayed on the 1st terminal of many models.

[0009]

[Means for Solving the Problem] To achieve the above objects, a file size of 1 page edits the 2nd different Web contents for terminals from the 1st terminal, and this invention is characterized by that a Web contents distribution method which distributes the Web contents to the 1st terminal of distribution request origin comprises the following.

The 1st step that divides Web contents of a distribution object into screen element units in a contents creation computer, and transmits to a contents distribution service computer.

After saving a screen element received from said contents creation computer in a contents distribution service computer at a contents database, The 2nd step that receives a distribution request from the 1st terminal over saved Web contents, combines said screen element dynamically in the range which does not exceed

restriction capacity with a file size [in the 1st terminal of the distribution request origin concerned] of 1 page, and is distributed to the 1st terminal of distribution request origin.

Before receiving a distribution request of Web contents, machine kind information of the 1st terminal of distribution request origin of the Web contents concerned, It has the 3rd step that registers restriction capacity with a file size [corresponding to machine kind information] of 1 page into a terminal database, Said 2nd step acquires machine kind information included during a distribution request from the 1st terminal, Restriction capacity with a file size [corresponding to the machine kind information] of 1 page is searched from said terminal database, and it has a step which combines said screen element dynamically based on data volume of search results. Said 2nd step is further provided with a step which charges a contents distribution service fee with reference to machine kind information of the 1st terminal at a contents creator. According to a communicating state, it has further a step which changes the number of screen elements combined dynamically.

[0010]A Web contents distribution system concerning this invention, A contents creation computer divides Web contents of a distribution object into screen element units, It has 1st means to transmit to a contents distribution service computer, After said contents distribution service computer saves a screen element received from said contents creation computer at a contents database, A distribution request from the 1st terminal over saved Web contents is received, said screen element is dynamically combined in the range which does not exceed file size restriction capacity of 1 page in the 1st terminal of the distribution request origin concerned, and it has 2nd means to distribute to the 1st terminal of distribution request origin. Before said contents distribution service computer receives a distribution request of Web contents, machine kind information of the 1st terminal of distribution request origin of the Web contents concerned, It has 3rd means to register restriction capacity with a file size [corresponding to machine kind information] of 1 page into a terminal database, Said 2nd means acquires machine kind information included during a distribution request from the 1st terminal, searches restriction capacity with a file size [corresponding to the machine kind information] of 1 page from said terminal database, and is provided with a means to combine a screen element dynamically based on data volume of search results. Said 2nd means is further provided with a means to charge a contents distribution service fee with reference to machine kind information of the 1st terminal at a contents creator. According to a communicating state, it has further a means to change the number of screen elements combined dynamically.

[0011]This invention is characterized by a Web contents edit program comprising the following.

The 1st step that displays contents of a distribution object on a display screen.

The 2nd step that sets up a boundary between displayed screen elements arbitrarily.

The 3rd step that generates a hyperlink between screen elements to which a boundary was set.

The 4th step that distributes a screen element which generated said hyperlink to a contents distribution service computer.

In said 1st step, contents divided into two or more screen elements are displayed on one screen. In said 2nd step, it has further change and a step deleted and added by element units of HTML structure of contents for a boundary line between screen elements. In said 3rd step, correlation operation of a screen element equivalent to a link destination is received on a text in selected contents, It has further a step which generates a hyperlink which makes a selected text a hypertext and makes a link destination a screen element by which correlation operation was carried out. In said 3rd step, it has further a step which changes and displays a display mode of a hyperlink according to the completion of edit of a screen element of the hyperlink point in contents, and un-completing. Here, a

screen element is certainly defined as a pause of a tag unit which must be distributed by one settlement, and page division within a screen element is not performed.

[0012] This invention is applicable not only like a portable telephone but Personal Digital Assistants, such as PDA provided with a Web browsing function. It is applicable also to information home appliance products provided with a function which accesses the Internet and peruses contents, such as a facsimile machine and a refrigerator, at agitation. Therefore, in this invention, apparatus, such as a portable telephone, PDA and a facsimile machine, and an information home appliance, is named generically, and it is called "the 1st terminal."

[0013]

[Embodiment of the Invention] Hereafter, one gestalt in the case of carrying out this invention is concretely explained with reference to drawings. Drawing 1 is an entire configuration figure showing the 1 embodiment of the Web contents distribution system for the personal digital assistants concerning this invention. The system shown by this embodiment The contents distribution service providing facility 100, It comprises the personal digital assistants 140, such as the gateway server 130 which performs the protocol conversion of the contents creation organization 110, the Internet 120, and a portable telephone network and the Internet 120, a portable telephone, PDA. In this case, although contents can be distributed also to the facsimile machine 150 and the information home appliance products 160 provided with the function which peruses contents by Internet 120 course, below, the case where the contents to the personal digital assistant 140 are distributed is represented and explained.

[0014] The Web contents distribution service providing facility 100, Web server 103 which has functions, such as offer of the Web contents edit editor 101, reception of the screen element 102, content description language translation, Web contents generation, and distribution, By a contents creator. customizing -- having had -- a screen -- an element -- 102 -- storing -- a personal digital assistant -- **** -- a contents database -- (-- DB --) -- 104 -- a personal digital assistant -- it can set -- a model -- an exception -- one -- a page -- a file size -- restriction capacity (file size) -- etc. -- a performance data -- holding -- a personal digital assistant -- an information database -- (-- DB --) -- 105 -- having -- **** .

[0015] The contents creation organization 110 comprises the contents creation / edit computer 111. The Web contents distribution service providing facility 100 and the contents creation organization 110 are tied with the Internet 120, and transmit and receive the Web contents edit editor 101 and the screen element 102 via the Internet 120. The personal digital assistant 140 is connectable with the Internet 120 by going via the gateway server 130.

[0016] Drawing 2 is a flow chart which shows the outline of the whole distribution service processing of Web contents. First, a contents distribution service is used and the contents creator of the Web contents creation organization 110 which is going to distribute the contents which he created registers as a user to the Web contents distribution service providing facility 100 (Step 201). Here, it adds to the personal information of contents creators, such as a contact mail address and a pulling-down account number of a distribution service utilization charge, as contents of registration, Since it specifies whether Web contents edit and distribution for the model of personal digital assistant 140 throat are performed, machine kind information and a service use period are registered. Here, the registered personal information and the information on a correspondence model, and the information on a service use period are stored in personal digital assistant information DB105 by Web server 103. Restriction capacity with a file size [corresponding to each machine kind information of the personal digital assistant 140] of 1 page is beforehand registered into personal digital assistant information DB105 by the administrator of the contents distribution service providing facility 100.

[0017] The Web contents edit editor 101 is provided from the Web contents

distribution service providing facility 100 after completion of user registration to contents creation / edit computer 111 of the Web contents creation organization 110 (Step 202). Web contents creation / edit computer 111 is required to distribute the Web contents beforehand created by the existing editor to the personal digital assistant 140 using the Web contents edit editor 101 for which it was provided -- edit and the simulation of are done (Step 203). After creation and edit of Web contents are completed, Web contents creation / edit computer 111 transmits the screen element 102 to the Web contents distribution service providing facility 100 via the Internet 120 (Step 204).

[0018]Web server 103 of the Web contents distribution service providing facility 100 which received the screen element 102 stores the received screen element 102 in the contents database 104 for personal digital assistants (Step 205). Then, so that the model and performance (especially restriction capacity with a file size of 1 page) of the personal digital assistant 140 which have accessed those Web contents may be suited, By combining two or more screen elements according to editorial contents, Web contents are generated dynamically and distributed (Step 206). When it distributes, Web server 103 of the Web contents distribution service providing facility 100 performs processing which charges a distribution service utilization charge to the maker of the distributed contents. In this case, charging amount is calculated according to the data volume of the distributed contents.

[0019]Drawing 3 is a figure showing the correspondence model of personal digital assistant 140 and the example of a setting screen of an available term which are used at Step 201. If the Web contents creator who is going to receive service accesses Web server 103 which the Web contents distribution service providing facility 100 is managing, A correspondence model and an available term setting screen as shown in D301 are displayed on the screen of Web contents creation / edit computer 111. Then, the Web contents creator 110 clicks the radio button D302, and chooses the target model group. Then, the list of kind names corresponding to the content description language chosen as the pull down menu D303 with the radio button D302 is displayed. A Web contents creator chooses a required kind name out of it. The kind name to choose is one or more.

[0020]A service use period is set to the number input of D304 by selection of a radio button. Based on contents selected by D303 and D304, the basic charge paid every month is calculated and displayed on D305. If the contents of registration are right, the registering button D306 will be pushed and registered. When stopping registration, Cancel button D307 is pushed and it ends. The information set up by this register operation is registered into the personal digital assistant information database 105 of the contents distribution service organization 100 according to a user (according to contents creator).

[0021]Drawing 4 is a flow chart which shows the editing processing procedure of the Web contents using the Web contents edit editor 101 provided from the Web contents distribution service providing facility 100. First, a Web contents creator or an editor uses the existing HTML editor etc. in contents creation / edit computer 111, and creates Web contents. After creation is completed, the Web contents edit editor 101 provided from the Web contents distribution service providing facility 100 is used, and division into screen element units is performed (Step 401). A screen element is certainly defined as a pause of the tag unit which must be distributed by one settlement, and the page division within a screen element is not accepted.

[0022]After Step 402 is completed, the link between screen elements is set up (Step 402). If it seems that edit of Web contents was completed, a simulation facility will be used and the result of Web contents will be checked (Step 403). As a result, when it is judged that the reorganization collection of a page is required, the reorganization collection of contents is performed (Step 404). When it is judged that Web contents were completed at Step 404, the screen element 102 is transmitted to the Web contents distribution service organization 100 (Step 405).

[0023]Drawing 5 is a figure showing an example of the screen constitution of the Web contents edit editor 101. The screen of the Web contents edit editor 101 is roughly divided, and is divided roughly into the screen left side region D501 which performs a browser display, and a simulation screen and the screen right area D502 on which the screen of a link destination is displayed at the time of screen element link setting.

[0024]Next, the method of division of screen element units of having used the Web contents edit editor 101 which displays such a screen is explained. First, the file menu M501 in the screen of drawing 5 is clicked, and the Web contents of an editing object are displayed on the screen left side region D501 from the menu "which opens a file." The movable bar B501 is also displayed in that case. This bar B501 shows the boundary between screen elements. Unless the restriction capacity of the size of the screen element beforehand defined by dragging using the mouse pointer P501 is exceeded, a user can set up the bar B501 freely. This bar B501 expresses the boundary of a HTML tag element. Therefore, the bar B501 is not always displayed in a straight line. For example, when two or more HTML tags are contained in a party, it is displayed as a bar which changed along the boundary of tag elements.

[0025]Since a Web contents creator can specify a page division place by moving the bar B501, even when a page is divided, Web contents can be distributed as a Web contents editor's intention. A screen element is expressed like T501 within HTML sauce by the <DIV> tag to which the ID number was added.

[0026]Drawing 6 is a figure showing an example using the Web contents edit editor 101 in Step 402 of the setting method of a screen element link. The Web contents under edit shall be displayed on the screen left side region D501. Since the screen element link is not set to all the hyperlinks at this time, all the characters of the hyperlink are specified in red (drawing 6 shading display). Next, the file menu M501 is clicked and the link destination page D601 of the screen left side region D501 is displayed on the screen right area D502 from the menu "which opens a link destination page." The link destination page D601 assumes that division of screen element units is completed beforehand.

[0027]When the mouse pointer P501 is moved on the link destination page D601, the color of the screen element to which the mouse pointer P501 points changes, and it is shown that the screen element is chosen. The figure shows that the screen element E601 of "Ox***-**** 248000 yen" is a selective state. The button of a mouse will be clicked, if the mouse pointer P501 is moved on the screen element E601 and the screen element E601 changes to red, when the target screen element is the screen element E601 (screen element ID=3 of price.html) (if it will be in a selective state).

[0028]Then, a button is not detached as it is but it moves onto the target hyperlink L601 (it dragging and dropping). Since the color of the hyperlink L601 will change if it moves onto the hyperlink L601, it checks that the color has changed and the button of a mouse is detached. Then, the color of the character of the hyperlink L601 changes to blue, and a screen element link will be set up. At this time, the HTML sauce of the Web contents under edit is updated automatically, as shown in T601, and a link destination shows a screen element. When a screen element link is not set up, all the pages of a link destination are displayed like before.

[0029]Drawing 12 is an example which changes into a screen element link the character string which is not a hyperlink. First, range specification of the character string "Ox***-****" currently displayed in the Web contents under edit is carried out using a mouse etc. in the screen left side region D501. The selection range S1201 is set up by this operation. Then, the screen element E601 used as a screen element link destination is dragged and dropped on the selection range S1201. By the above operation, the selection range S1401 is changed into a screen element link (hyperlink), as shown by the HTML sauce T1201.

[0030]If setting out of screen element-units division and the link between screen elements is completed about all the pages, the contents in Step 403 will be

simulated. Then, if it judges that contents were completed in Step 404, the screen element 102 will be transmitted to the Web contents distribution service providing facility 100 by clicking the distribution button M502 (Step 405).

[0031]Drawing 7 is the figure in which the screen element 102 showed the form stored in the contents database 104 for personal digital assistants. Each line expresses the screen element, respectively. C701 is a sequence which stores the ID number set up at the time of the screen element-units division shown by T501 (drawing 5). C702 is a sequence which stores the screen element ID number before screen element ID number C701 of the same line. C703 is a sequence which stores the screen element ID number after screen element ID number C701 of the same line. C704 is a sequence which stores the HTML sauce (contents of a screen element) in <DIV> </DIV> expressed with screen element ID number C701 of the same line. C705 is a sequence which calculates and stores the file size at the time of changing the screen element C704 into the content description language for personal digital assistants (unit = byte). C706 is a sequence which stores the HTML file name (contents URL) to which screen element ID number C701 belongs. C707 is a sequence which stores the description language of the Web contents C706.

[0032]Drawing 8 is a flow chart with which the Web contents distribution service providing facility 100 explains the procedure which distributes Web contents to the personal digital assistant 140. First, a contents request is performed from the personal digital assistant 140 to the Web contents distribution service donor 100. In that case, the Web contents distribution service providing facility 100 specifies the model of personal digital assistant 140 of an accessing agency (Step 801). It ends, when the specified model is not contained in the distribution object model registered at Step S201 at this time. When contained, restriction capacity with a file size [in the model] of 1 page is acquired from the personal digital assistant information database 105 (Step 802). <DPN=0007>Then, the screen element of the part settled at the file size restrictions acquired at Step 802 is acquired from the contents database 104 for personal digital assistants (Step 803), and the Web page to distribute is generated (Step 804).

[0033]Then, the hyperlink of the generated Web page is updated to the link of a screen element (Step 805). Then, a Web content description language is changed into the content description language corresponding to the accessed personal digital assistant 140 (Step 806), and is distributed (Step 807).

[0034]Drawing 9 is a figure explaining signs that combine the screen element of the part settled in the file size restriction capacity of 1 page shown at Steps 803, 804, and 805, and a Web page is generated dynamically. For example, restriction capacity with a file size of 1 page presupposes that the contents request occurred from the personal digital assistant 140 which is 1 K byte.

[0035]The Web contents distribution service providing facility 100 acquires the screen element 901 from the contents database 104 for personal digital assistants until the sum total of the screen element size C705 will be 1 K byte. If the sum total of the screen element size C705 of the acquired screen element 901 serves as the maximum size within 1 K byte, the acquired screen element 901 will be combined and one Web page 902 will be generated. In that case, the hyperlink 903 to the next page is generated using ID number C701 of the last of the acquired screen element 901. This generated Web page 902 is a size with a file size restriction capacity [in this personal digital assistant / less than 1 K byte] of 1 page.

[0036]Thus, distribution of the Web contents doubled with various personal digital assistants (multi-device) in which the file size restriction capacity of 1 page differs only by the contents creator preparing the screen element is attained.

[0037]As shown in drawing 13, a certain Web contents 1301 are stored in DB as a

set of two or more screen elements. For example, in order to distribute Web contents to a personal digital assistant, 3 and from 4 to 6 [from the screen element 1 to] is combined, respectively, and suppose that the Web contents 1302 and 1304 were generated. These Web contents divide the one Web contents 1301 from the first. Then, between the Web contents 1302 and 1304 is continued, and it enables it to refer to it. To the Web contents 1302, the hyperlink 1303 indicating the head of the screen element 4 which is a head element of the screen element which constitutes the Web contents 1304 which should follow the next is generated automatically. the hyperlink 1305 which points to the head of the screen element 1 which is a head element of the screen element which constitutes the front Web contents 1302 to the Web contents 1304. The hyperlink 1306 indicating the head of the screen element 7 which is a head element which constitutes the Web contents which continue after the Web contents 1304 is generated automatically. The same work is done to all the Web contents which combined the screen element and were generated. It becomes possible to refer to the divided Web contents continuously according to this work.

[0038]Drawing 10 is a figure explaining how a link destination page is displayed, when a screen element link is clicked. Web page 1001 illustrated here is an example when completing all the steps shown with the flow chart of drawing 8 and displaying the distributed Web page by a browser.

[0039]The Web contents visitor should think that he would like to know the price of product names "Ox**-*"", and should choose the hyperlink 1002 "[1] Price of this product." The hyperlink 1002 is a screen element link to the screen element of screen element ID=3 of price.html as shown by T601 of drawing 6. A contents request is made by Web server 103 when the hyperlink 1002 is chosen. Since the contents request to a screen element is received in that case, Web server 103 acquires only the link destination screen element 1003, carries out Web page generation, and distributes. Since only the information which a Web contents visitor needs can be distributed by this, useless communication can be reduced.

[0040]As mentioned above, as explained, according to this embodiment, only by a Web contents creator setting up a screen element, non-personal digital assistant-oriented Web contents can be divided without spoiling a maker's intention, and can be distributed to a personal digital assistant.

[0041]It becomes possible to distribute the Web contents which do not exceed restriction capacity with a file size [the] of 1 page for every model of accessed personal digital assistant. As a result, it becomes possible to realize contents distribution of what is called a multi-device corresponding to the personal digital assistant of many models in which display performances differ.

[0042]In order to generate and distribute only the Web contents of a required link destination page to the link to the demand of a screen element link, a Web contents visitor becomes possible [that required information comes to hand promptly], without paying a useless telex rate.

[0043]Even if the Web contents generated dynamically are among [file size restriction capacity] 1 page of the personal digital assistant 140, If it controls to change the size of the Web contents generated dynamically according to the communicating state of Web server 103 or a communication line, what is called "Eight Second Rule" is solvable. Namely, when Web server 103 is accessed from the personal digital assistant 140, and Web server 103 does not answer within 8 seconds, the rule of thumb (Eight Second Rule) that a visitor will give up an inspection is known, but. In the usual state where the communication line is not crowded, as shown in drawing 11 (a), to the file size =3KB personal digital assistant 140A, a screen element is combined and distributed so that the sum total may become close to 3 KB if possible.

[0044]However, in the congestion state with which the communication line is crowded, as shown in drawing 11 (b), the size of a total screen element distributes in size still smaller than the file size restriction capacity of 1 page of each personal digital assistants 140A, 140B, and 140C. This can improve

the response time of many terminals by distributing the Web page of small size to many terminals rather than distributing the Web page of big size to one terminal. That is, it becomes possible to solve the problem of Eight Second Rule. In this case, the confusion situation of the communication line from the personal digital assistant 140 to Web server 103 requires Web contents of Web server 103 for every fixed time from the terminal for measurement, and becomes clear by that response time. Although the example which edits the Web contents for PCs into personal digital assistants, and distributes them was given in the above-mentioned embodiment, It cannot be overemphasized that it can apply also when editing personal digital assistant-oriented Web contents for the facsimile machine which has an inspection function of Internet contents, or information home appliance apparatus.

[0045]

[Effect of the Invention] According to this invention, the Web contents created 2nd for [, such as a personal computer,] terminals so that clearly from the above explanation, It can be made to display on the 1st terminal of many models, such as a portable telephone, without dividing, without spoiling a maker's intention and burdening a maker with the burden of contents division work.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is an entire configuration figure showing the embodiment of the Web contents distribution system for the personal digital assistants concerning this invention.

[Drawing 2] It is a flow chart which shows the outline of processing of the whole contents distribution service.

[Drawing 3] It is a figure showing an example of the setting screen of a correspondence model and an available term.

[Drawing 4] It is a flow chart which shows the procedure of Web contents edit in which the Web contents edit editor was used.

[Drawing 5] It is a figure explaining the example of screen constitution of a Web contents edit editor, and the method of division of screen element units.

[Drawing 6] It is a figure explaining the setting method of the screen element link using a Web contents edit editor.

[Drawing 7] It is a figure showing the data storage form of the screen element stored in the contents database for personal digital assistants.

[Drawing 8] It is a flow chart which shows the procedure which distributes Web contents to a personal digital assistant.

[Drawing 9] It is an explanatory view showing the procedure which combines the screen element for maximum file size, and generates a Web page dynamically.

[Drawing 10] When a screen element-units link is clicked, it is a figure explaining how a link destination page is displayed.

[Drawing 11] It is a figure explaining the control which changes the size of the contents to distribute according to the confusion situation of a communication line.

[Drawing 12] It is a figure explaining making automatically the character string which is not a hyperlink a screen element link.

[Drawing 13] It is an explanatory view showing generating automatically the hyperlink which refers to the Web contents of order by a character string, such as the "next" and "returning", and enabling continuation reference of Web contents.

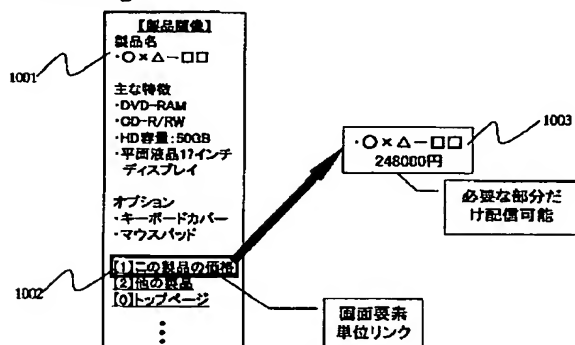
[Drawing 14] It is an explanatory view showing the problem of the contents distribution method in the former.

[Description of Notations]

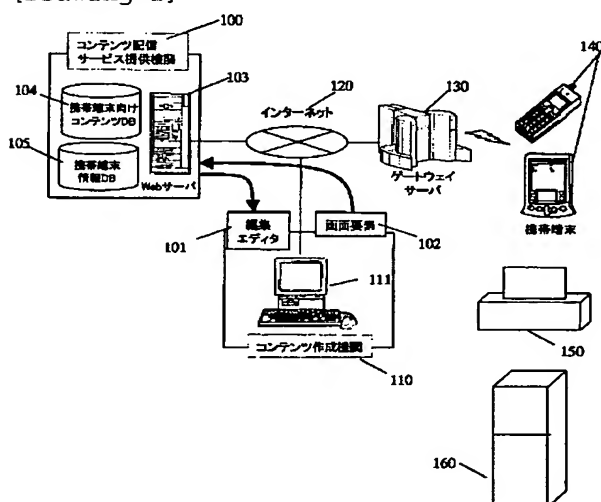
100 -- A contents distribution service providing facility, 101 -- Web contents edit editor, 102 -- A screen element, 104 -- The contents database for personal digital assistants, 105 [-- The Internet, 130 / -- A gateway server, 140 / -- A personal digital assistant, D301 / -- An object model and available term registration picture.] -- A personal digital assistant information database, 110 -- A contents creation organization, 111 -- Contents creation / edit computer, 120

DRAWINGS

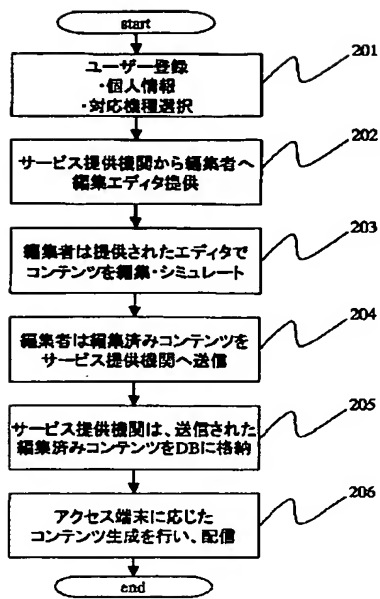
[Drawing 10]



[Drawing 1]



[Drawing 2]



[Drawing 3]

対象機種・利用期間登録画面

機種グループ

- ☒ ABC
- ☐ JJJ
- ☐ DDD
- ☐ GGG

機種名

A123
B456
C123E
D234E
E137
F389
GGGG

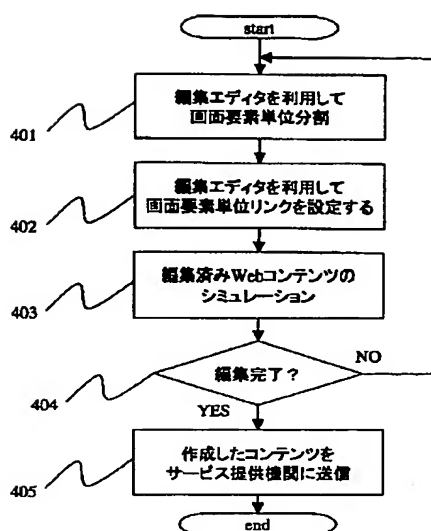
利用期間: 3 ☒ ヶ月間 ☐ 年間

基本料金: 3,000 円/月

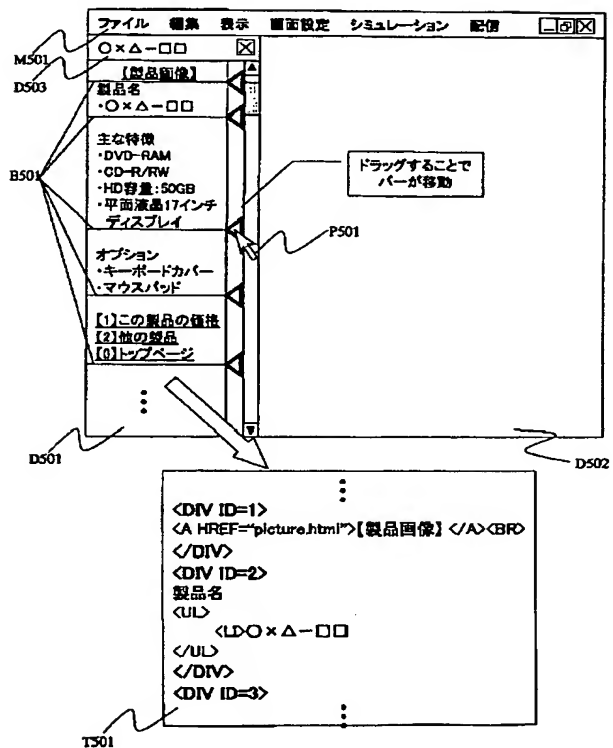
※サービス料金は、この基本料金の他に、配信したデータ量に応じた料金が加算されます。

登録 キャンセル

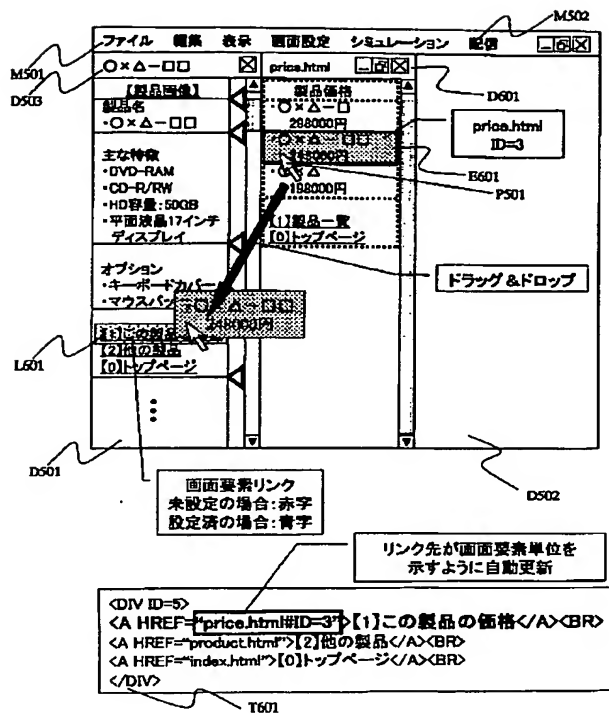
[Drawing 4]



[Drawing 5]



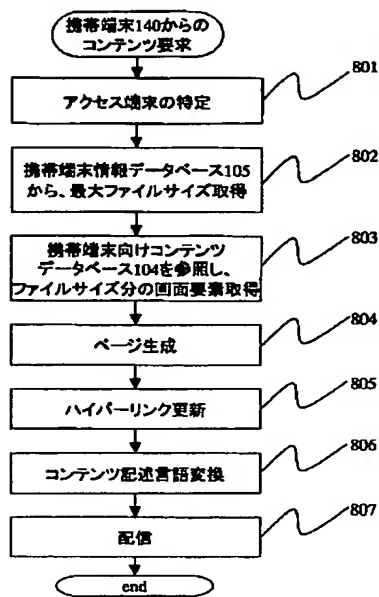
[Drawing 6]



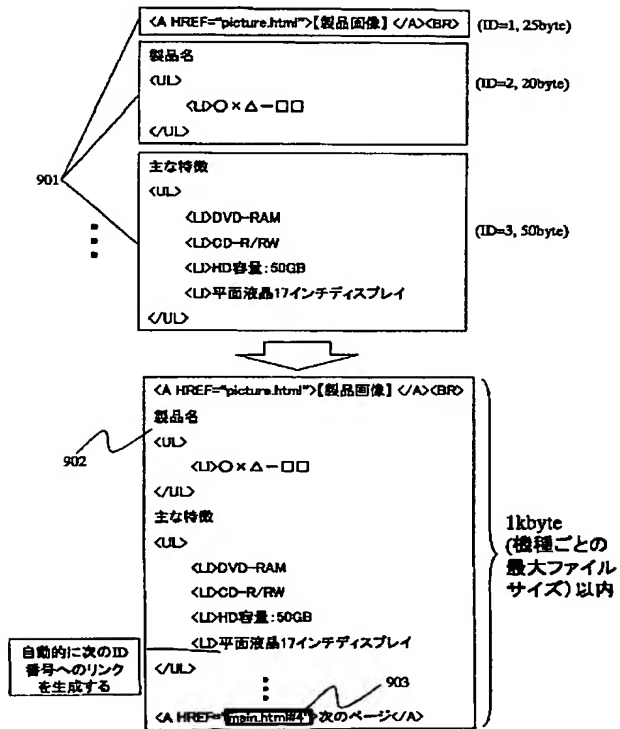
[Drawing 7]

ID	前 ID	後 ID	画面要素コンテンツ	コンテンツサイズ(byte)			コンテンツURL	言語
				HTML	HTML	HTML		
1	-	2	[1]この製品の価格 	25	25	25	main.html	HTML
2	1	3	製品名 [2]他の製品 	20	20	20	main.html	HTML
3	2	4	主な特徴 [0]トップページ 	50	30	50	main.html	HTML
4	3	5	オプション [1]この製品の価格 	40	40	40	main.html	HTML
5	4	6	[2]他の製品 [0]トップページ 	70	70	70	main.html	HTML
...

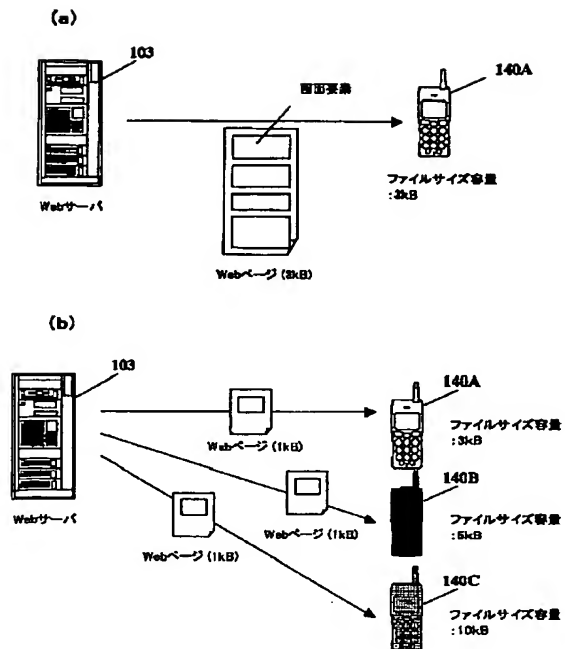
[Drawing 8]



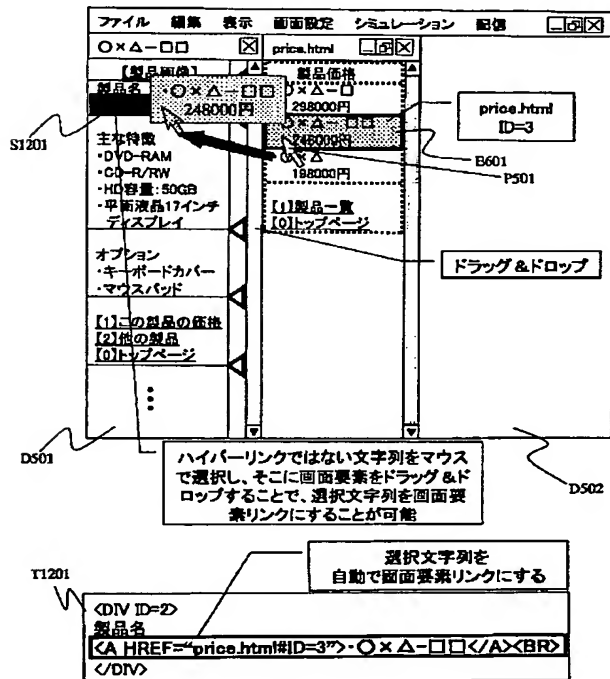
[Drawing 9]



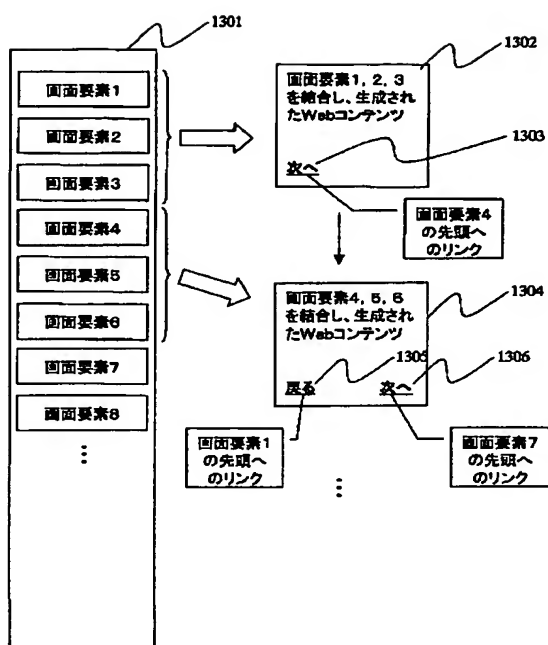
[Drawing 11]



[Drawing 12]



[Drawing 13]



WRITTEN AMENDMENT

[Written amendment]

[Filing date] November 26 (2001.11.26), Heisei 13

[Amendment 1]

[Document to be Amended] Specification

[Item(s) to be Amended] Brief explanation of the drawings

[Method of Amendment] Change

[Proposed Amendment]

[Brief Description of the Drawings]

[Drawing 1] It is an entire configuration figure showing the embodiment of the Web contents distribution system for the personal digital assistants concerning this invention.

[Drawing 2] It is a flow chart which shows the outline of processing of the whole contents distribution service.

[Drawing 3] It is a figure showing an example of the setting screen of a correspondence model and an available term.

[Drawing 4] It is a flow chart which shows the procedure of Web contents edit in which the Web contents edit editor was used.

[Drawing 5] It is a figure explaining the example of screen constitution of a Web contents edit editor, and the method of division of screen element units.

[Drawing 6] It is a figure explaining the setting method of the screen element link using a Web contents edit editor.

[Drawing 7] It is a figure showing the data storage form of the screen element stored in the contents database for personal digital assistants.

[Drawing 8] It is a flow chart which shows the procedure which distributes Web contents to a personal digital assistant.

[Drawing 9] It is an explanatory view showing the procedure which combines the screen element for maximum file size, and generates a Web page dynamically.

[Drawing 10] When a screen element-units link is clicked, it is a figure

explaining how a link destination page is displayed.

[Drawing 11] It is a figure explaining the control which changes the size of the contents to distribute according to the confusion situation of a communication line.

[Drawing 12] It is a figure explaining making automatically the character string which is not a hyperlink a screen element link.

[Drawing 13] It is an explanatory view showing generating automatically the hyperlink which refers to the Web contents of order by a character string, such as the "next" and "returning", and enabling continuation reference of Web contents.

[Description of Notations]

100 -- A contents distribution service providing facility, 101 -- Web contents edit editor, 102 -- A screen element, 104 -- The contents database for personal digital assistants, 105 [-- The Internet, 130 / -- A gateway server, 140 / -- A personal digital assistant, D301 / -- An object model and available term registration picture.] -- A personal digital assistant information database, 110 -- A contents creation organization, 111 -- Contents creation / edit computer, 120

----- [Written amendment]

[Filing date] November 26, Heisei 13 (2001.11.26)

[Amendment 1]

[Document to be Amended] Specification

[Item(s) to be Amended] 0006

[Method of Amendment] Change

[Proposed Amendment]

[0006] Namely, the Web contents which the contents creator created for example, when it comprises picture management characterizing portion [which is soft five items] [1] - [5], If division is not performed appropriately, only the feature item to [1] - [3] will be displayed, Will be displayed as if the feature item was three items, or The inside of "not supporting Windows2000 (registered trademark of Microsoft Corp.)", Description of "not corresponding" is divided into other pages, and there is a problem of being the display which gives misunderstanding as if it supported "Windows2000."